

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Jerry Doty, Luis A. Viriato and Ronald R. Meadows

Serial No.: 09/753,307 Examiner: Le, Karen L.

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For: METHOD FOR SWITCHING ACTIVE CALLS

Mail Stop Amendment
Commissioner for Patents
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AMENDMENT

Responsive to the Office Action, Paper No. 20070723, dated July 25, 2007, please amend the application as follows.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 6 of this paper.

IN THE CLAIMS

1. (Previously presented) A method for switching active calls between entities on a network device, the method comprising:

determining that a time has been reached for an upgrade of firmware on a first processor that is still actively handling calls;

collecting information about a current call on the first processor while the current call is being processed by a first entity;

initializing a second processor residing in the network device with the first processor with the information while the current call is being processed on the first processor;

switching the current call from the first processor to the second processor;

releasing the first processor from further processing of the call; and

repeating the switching of the current call from the first processor until the first processor is free from all active calls for maintenance.

2. (Previously presented) The method of claim 1 wherein the processors are digital signal processors located within the same module.

3. (Previously presented) The method of claim 1 wherein the processors are located in different modules located on the same card.

4. (Previously presented) The method of claim 1 wherein the processors are located on different cards in the network device.

5. (Previously presented) The method of claim 1 wherein the method further comprises:

copying compression dictionary tables from the first entity; and

loading compression tables in a second entity.

6. (Currently amended) The method of claim 1 wherein initializing a second ~~entity~~ processor further comprises initiating a retrain sequence on the second ~~entity~~ processor.

7. (Original) The method of claim 1 wherein the information about a current call includes modulation.

8. (Original) The method of claim 1 wherein the information about a current call includes country code.

9. (Previously presented) A computer-readable medium, having embodied therein software code that when executed results in:

identifying that a time has been reached for an upgrade to a first processor actively handling calls in a network device;

collection of information about a current call on the first processor while the current call is being processed by the first processor;

initialization of a second processor in the network device with the information while the current call is still active on the first processor;

switching of the current call from the first processor to a second processor;

direction of the second processor to retrain and accept the current call; and

repeating until the first processor is free of current calls.

10. (Previously presented) The computer-readable medium of claim 9, wherein said medium further comprises a downloadable file.

11. (Previously presented) The computer-readable medium of claim 9, wherein said medium further comprises an image file uploadable into a digital signal processor.

12. (Previously presented) A network device, comprising:

at least two processing entities residing in the network device, each able to handle at least one active call;

a connector operable to connect incoming phone lines to the at least two processing entities; and

a controller to:

determine that a time has been reached for an upgrade to a first processor that is actively handling calls; and
switch each active calls from one entity to another without interruption, and to repeatedly switch active calls on the first entity until the processor is free for maintenance.

13. (Previously presented) The device of claim 12 wherein the controller is part of a processor located on one of the entities.

14. (Previously presented) A network device, comprising:

at least two means for handling active calls residing in the network device;
a means for connecting the means for handling active calls with means for transmitting phone calls;

a means for determining that a time has been reached for an upgrade to a first processing means that is actively handling calls; and

a means for switching each active calls from a first processing means for handling active calls to another processing means for handling active calls without interruption, and for repeatedly switching active calls on the first means for handling active calls and until the first processing means is free for maintenance.

15. (Original) The device of claim 14 wherein the device further comprises a modem ISDN channel aggregation device.

16. (Original) The device of claim 14 wherein the means for handling active calls further comprises digital signal processors.

17. (Original) The device of claim 14 wherein the means for handling active calls further comprise modules located on the same card.

18. (Original) The device of claim 14 wherein the means for handling active calls further comprises cards.

19. (Original) The device of claim 14 wherein the means for switching active calls further comprises a controller.

REMARKS

Claims 1-19 are pending in the application. Claims 1-19 stand rejected. Claim 6 is amended. No new subject matter is added. Claims 1-19 are now pending in the application. Reconsideration and allowance of the pending claims is requested in light of the above amendments and the following remarks.

Claim Rejections – 35 U.S.C. § 103

Claims 1-19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Chong et al. (U.S. Patent No. 6,205,557) in view of Denby et al. (U.S. Patent No. 6,976,062). The applicant traverses the rejections.

The Office Action states that claims 1-19 are rejected under Chong and Denby, but only supplies a basis for the rejections of claims 1-4, 6, 7, and 9-19. Consequently, in responding to the rejections, the applicant has assumed that the Examiner did not mean to reject claims 5 and 8 under Chong and Denby.

Regarding claims 1 and 9, the claims refer to initializing a second processor while a current call is being processed on a first processor. The Examiner proposes that Chong teaches this feature at standby call server 141 and col. 5, lines 22-23. *See* Office Action page 2. The applicant respectfully disagrees. The only time a switch is made from the active call server 140 to the standby call server 141 in Chong is when the call server has failed. *See*, for example, Chong, col. 3, lines 11-14 stating “[a]s shown in Fig. 3, the database 103 may include the standby call server 141. In one embodiment, the standby call server 141 is used to backup the active call server 140 *in the event of a failure of the active call server 140* [emphasis added].” Therefore, as the first processor has failed, it cannot be processing the current call when the second server is being initialized. Column 5, lines 22-23 of Chong merely state “[a]t some time subsequent to the receipt of the response, the interface server 120 determines that the active call server 140 has failed. The interface server then designates the standby call server 141 as the new active call server.” This portion does not say anything about standby call server 141 being initialized while active call server 140 is still processing a call; this portion of Chong makes clear that standby server 141 does not even become involved until after active server 140 has already failed, and thus is not processing a current call. Therefore, Chong does not teach initializing a second processor while a current call is being processed on a first processor, as recited in the

claims. Denby does not teach anything about call initialization and transfer, and thus does not remedy this deficiency of Chong.

Claims 1 and 9 further refer to repeating the switching of calls from the first processor until the first processor is free for maintenance. The Examiner proposes that Chong teaches this feature at col. 5, lines 18-19. *See* Office Action page 2. The applicant respectfully disagrees. There are no other calls taught, suggested or mentioned in Chong, so Chong cannot teach repeating the transfer of calls. If there were any other calls on the first processor of Chong, they are already gone before switching even begins, because the first processor has already failed. *See* Chong, col. 3, lines 11-17. Column 5, lines 18-19 of Chong state “[t]he call information is then copied and a copy 123 is forwarded to the standby call server 141.” Nothing in this portion of Chong refers to repeating a call transfer process until a first processor is free for maintenance. Nowhere else in the disclosure of Chong does it refer to repeatedly transferring calls until a processor is free of calls. Therefore, Chong does not teach repeatedly switching active calls from a first processor, as recited in the claims. Denby does not refer to transferring calls at all, and thus does not remedy this deficiency of Chong.

Claims 1 and 9 also refer to determining that a time has been reached for an upgrade of firmware on a first processor that is still actively handling calls. The Examiner acknowledges that Chong does not teach this feature, but then proposes that Denby teaches this feature. *See* Office Action page 3. The applicant agrees that Chong does not teach this feature, but disagrees that this feature is taught in Denby. Specifically, the Examiner cites to the Summary of Denby where it describes that a supplier of products can utilize Denby’s system to remotely upgrade the products over a network. *See id.* However, Denby does not teach that any of these products are processing calls, or more specifically, that a determination is made to upgrade the products while the products are actively handling calls. The disclosure of Denby has nothing to do with call processing, therefore, it cannot teach that a determination is made to upgrade firmware while a processor is actively handling calls.

Further, the Examiner is using impermissible hindsight in combining Denby with Chong. The Examiner proposes that “it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teach [sic] of Denby into Chong’s system in order to determine that an upgrade time has arrived. When the detection method in Chong is applied earlier (apply before the processor is failed) then all calls that are transferred will also

include all active calls at the time the second server is being initialized.” See Office Action page 3. Everything that the Examiner is pointing to as justifying the combination comes from the applicant’s own disclosure and is therefore impermissible hindsight. There is no suggestion in Chong to apply its redundant call system to determine upgrade times; the entire disclosure of Chong is directed to managing a call when a server fails. Denby has nothing to do with call processing and thus could not provide the rationale that the Examiner is proposing. In essence, the Examiner has read the applicant’s disclosure, seen all the inventive principles relating to preventative upgrades embodied therein, and then found those principles obvious in view of a patent that deals specifically with handling device failures and has nothing to do with preventative maintenance. This is the very definition of impermissible hindsight. Therefore, the applicant submits that the combination of Denby with Chong is improper.

Finally, Chong actually teaches away from the proposed combination with Denby. Chong specifically teaches that its invention addresses the problem in the prior art that “new technology is needed to reduce the effects of the failures [of call processors] between the updates” (see Chong col. 1, lines 29-32, emphasis added). Therefore, Chong specifically teaches that the failures it is referring to are not analogous to reaching a time for a firmware upgrade; they happen *between* upgrades. Consequently, Chong teaches away from a combination that would replace its ‘failure determination’ with a determination that a time has been reached for a firmware upgrade.

For at least the reasons identified above, claims 1 and 9 are allowable over the combination of Chong and Denby as the combination does not teach all of the features of the claims. Dependent claims 2-8 and 10-11 are likewise allowable.

Further regarding claim 1, the claim recites “releasing the first processor from further processing of the call.” This is not taught in Chong for the same reason as the initialization feature discussed above; the first processor has failed. The disclosure of Chong makes no mention of releasing the processor. As the processor has already failed, it is by default released from further processing and no explicit release message is needed nor taught in Chong. For at least this additional reason, claim 1 is allowable over the combination of Chong and Denby.

Further regarding claims 2-4, the claims refer to the processors being located within the same module, in different modules on the same card, and on different cards in the network device, respectively. The Examiner proposes that all of these features are taught in Chong at

“Fig.2, DB 103; Fig. 3, server 140 and 141; Fig. 4, processors 170 of 140 and 141.” *See* Office Action page 3. The applicant respectfully disagrees. None of these portions of Chong say anything about processors located in the same module, different modules on the same card, or different cards in a network device. Chong does not make any reference in its disclosure as to where the processors are located other than to say that they are located in servers 140 and 141. *See* Chong col. 3, lines 26-31. Therefore, Chong does not teach the features of these claims. Denby does not mention any call processors or their locations, and thus does not remedy this deficiency of Chong. For at least this additional reason claims 2-4 are allowable over the combination of Chong and Denby.

Further regarding claim 6, the claim recites “initializing a second processor further comprises initiating a retrain sequence on the second processor.” The Examiner proposes that Chong teaches this feature at col. 5, lines 22-30. *See* Office Action page 4. The applicant respectfully disagrees. The cited portion of Chong teaches that a call from the failed active call server 140 can be transferred to the standby call server 141 because the standby call server was already designated to backup the active server and had stored call information. Therefore, Chong does not teach any retraining of the standby call server 141 in order to transfer the call; the standby call server 141 has already been set up to accept calls from the failed active server 140. Therefore, Chong does not teach initializing a second processor by initiating a retrain sequence, as recited in the claim. Denby does not teach initializing a second processor at all, and thus does not remedy this deficiency of Chong. For at least this additional reason, claim 6 is allowable over the combination of Chong and Denby.

Further regarding claim 7, the claim recites “information about a current call includes modulation.” The Examiner proposes that Chong teaches this feature at “Col. 2, lines 43-44.” *See* Office Action page 4. The applicant respectfully disagrees. The cited portion of Chong does not say anything about call information including modulation. The only thing Chong says about call information is that it might include a telephone number. *See* Chong col. 2, lines 40-41. Therefore, Chong does not teach call information including modulation, as recited in the claim. Denby does not teach call information at all, and thus does not remedy this deficiency of Chong. For at least this additional reason, claim 7 is allowable over the combination of Chong and Denby.

Further regarding claim 10, the claim recites “said medium further comprises a

downloadable file.” The Examiner proposes that Chong teaches this feature at “Col. 6, lines 56-67”. *See* Office Action page 4. The applicant respectfully disagrees. The cited portion of Chong actually teaches that the query processor 170 can be any of various types of computing devices. The cited portion of Chong does not say anything about a computer readable medium comprising a downloadable file. The remaining disclosure of Chong does not remedy this deficiency. For at least this additional reason, claim 10 is allowable over the combination of Chong and Denby.

Further regarding claim 11, the claim recites “said medium further comprises an image file uploadable into a digital signal processor.” The Examiner proposes that Chong teaches this feature at “Col. 6, lines 56-67”. *See* Office Action page 4. The applicant respectfully disagrees. The cited portion of Chong actually teaches that the query processor 170 can be any of various types of computing devices. The cited portion of Chong does not say anything about a computer readable medium comprising an image file uploadable into a digital signal processor. The remaining disclosure of Chong does not remedy this deficiency. For at least this additional reason, claim 11 is allowable over the combination of Chong and Denby.

With regard to claims 12 and 14, the Examiner has interpreted the database 103 in Chong, which includes an active call *server* 140, a standby call *server* 141, a high speed interface (such as a LAN, *see* Chong, col. 3, lines 4-5), two interface servers 120 and two administrative servers 150 and 151 as being contained in one device in order to reject the features of these claims. As no definition of server is given in Chong, the plain meaning of the term ‘server’ would generally indicate that the database 103 is a logical grouping of several devices, not one network device. This is supported by the description of Figure 3 in the Brief Description of the Drawings as ‘a distributed database architecture.’ A distributed database architecture involves distributing various pieces of a database among several devices. Therefore, database 103 is not a single network device and thus is not analogous to the features in these claims.

Further, these claims recite several features that are not taught in Chong and Denby similar to the features of claims 1 and 9 including: determining that a time has been reached for a processor that is actively handling calls and repeatedly switching active calls. Therefore, claims 12 and 14 are allowable over Chong and Denby for at least the same reasons identified above with respect to claims 1 and 9. Dependent claims 13 and 15-19 are likewise allowable.

Further regarding claim 15, the claim recites “the device further comprises a modem ISDN channel aggregation device.” The Examiner has not pointed to any specific portions of either Chong or Denby as teaching this feature and the applicant does not find any such teachings. For at least this additional reason, claim 15 is allowable over the combination of Chong and Denby.

Claims 1-19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Chong et al. in view of Denby et al. and further in view of Zeck (U.S. Publication 2002/0101605). The applicant traverse the rejections.

The Office Action states that claims 1-19 are rejected under Chong, Denby, and Zeck, but only supplies a basis for the rejections of claims 5 and 8. Consequently, in responding to the rejections, the applicant has assumed that the Examiner did not mean to reject claims 1-4, 6, 7, and 9-19 under Chong, Denby, and Zeck.

Regarding claim 5, the claim recites “copying compression dictionary tables from the first entity; and loading compression tables in a second entity.” The Examiner acknowledges that the combination of Chong and Denby does not teach these features, but then proposes that these features are taught in Zeck. *See* Office Action page 6. The applicant respectfully disagrees. Although Zeck does teach dictionary compression methods, it does not teach that any compression dictionary tables are copied from a first entity or that compression tables are loaded into a second entity. Zeck does not teach that any compression tables are copied or loaded at all. Therefore, Zeck does not make up for the deficiencies of the combination of Chong and Denby. Consequently, claim 5 is allowable over the combination of Chong, Denby, and Zeck.

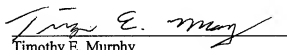
Regarding claim 8, although the claim is rejected under the combination of Chong, Denby, and Zeck, the Office Action does not give any basis for the rejection of the claimed features in any of these references. The Office Action merely states that the recited country code is “old and well know in telecommunication system.” *See* Office Action page 6. However, the claim specifically refers to information about a current call that is active on a processor including a country code. Therefore, general knowledge in the art about the existence of a country code does not render the claimed features obvious. Consequently, claim 8 is allowable over the combination of Chong, Denby, and Zeck.

Conclusion

For the foregoing reasons, reconsideration and allowance of the pending claims of the application as amended is requested. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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